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10/616,795	07/10/2003	Konstantina Papagiannaki	2275/SPRI.103899	1973

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EXAMINER	
SALL, EL HADJI MALICK	

ART UNIT	PAPER NUMBER
2157	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,795	PAPAGIANNAKI ET AL.	
	Examiner	Art Unit	
	El Hadji M. Sall	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the amendment filed on June 26, 2007. Claims 1-25 are pending. Claims 1-25 represent method for computing aggregate traffic between adjacent points of presence in an Internet protocol backbone network.

2. Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the predetermined time period" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

3. Claim Rejections - 35 USC § 102

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for

patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-3, 5-12, 14-18, 20 and 21 are rejected under 35 U.S.C. 102(e) as being unpatentable over Maltz et al. U.S. 20020143928.

Maltz teaches the invention as claimed including method and system for collection and storage of traffic data in a computer network (see abstract).

As to claim 1, Maltz teaches a method for determining link utilization in an IP network, the method comprising:

Collecting utilization values for links in the IP network over a predetermined polling period (paragraph [0068]);

Collecting topological information for links in the IP network (figure 8; paragraph [0080]; paragraph [0068]); and

Correlating the link utilization values with the topological information (paragraph [0037]; paragraph [0080]).

As to claim 2, Maltz teaches the method for determining link utilization of claim 1, further comprising:

Calculating aggregate link demand (paragraph [0040]).

As to claim 3, Maltz teaches the method for determining link utilization of claim 2, wherein calculating aggregate link demand comprises:

Identifying the Point of Presence pairs connected by each link using the topological information (paragraph [0029]);

Summing the utilization values collected for each of the links connecting a Point of Presence pair over a predetermined time period (paragraph [0049]); and

Dividing the sum of link utilization values for each Point of Presence pair by the number of utilization values included in the sum (paragraph [0068]).

As to claim 5, Maltz teaches the method for determining link utilization in an IP network, the method comprising:

Collecting link utilization values from routers in the IP network over a predetermined polling period (paragraph [0068]);

Collecting topological information from routers in the IP network (figure 8; paragraph [0080]; paragraph [0068]);

Correlating link utilization values with the topological information by identifying the Pointy of Presence pairs connected by each link for which a link utilization values was collected (paragraph [0037]; paragraph [0080]; paragraph [0029]);

Summing the utilization values for each link connecting a pair of Points of Presence (paragraph [0049]); and

Dividing the sum of link utilization values for a pair or Point of Presence by the number of link utilization values included in the sum (paragraph [0068]).

As to claim 6, Maltz teaches the method for determining link utilization of claim 5, wherein collecting incoming and outgoing link utilization values from routers in the IP network further comprises each router transmitting SNMP messages using UDP transport protocol (paragraph [0094]; paragraph [0101]-[0102]; paragraph [0118]-[0119]).

As to claim 7, Maltz teaches the method for determining link utilization of claim 6, wherein collecting link utilization values from routers in the IP network comprises:

Receiving an exponential weighed moving average of link utilization measurements for a first short time frame (paragraph [0045]); and

Averaging the received moving average link utilization measurements over a second longer time frame (paragraph [0074]).

As to claim 8, Maltz teaches the method for determining link utilization of claim 6, wherein collecting link utilization values from routers in the IP network comprises:

Receiving the total number of bytes transmitted over a link for a first short time frame (paragraph [0068]; paragraph [0045]); and

Averaging the received total number of bytes over a second longer time frame (paragraph [0074]).

As to claim 9, Maltz teaches the method for determining link utilization of claim 6, wherein collecting link utilization values from routers in the IP network comprises:

Receiving the total number of bytes received over a link for a first short time frame (paragraph [0068]; paragraph [0045]); and

Averaging the received total number of bytes over a second longer time frame (paragraph [0074]).

As to claim 10, Maltz teaches the method for determining link utilization of claim 6, wherein collecting link utilization values from routers in the IP network comprises:

Receiving the total number of bytes transmitted and received for a link over for a first short time frame (paragraph [0068]; paragraph [0045]); and

Averaging the received total number of bytes for a second longer time frame (paragraph [0074]).

As to claim 11, Maltz teaches the method for determining link utilization of claim 6, wherein downloading configuration information comprises downloading the name of each router, the Point of Presence containing each router, all active links connected to each router, and the destination of each active link connected to each router (paragraph [0033]; paragraph [0052]; paragraph [0036]).

As to claim 12, Maltz teaches the method for determining link utilization of claim 11, wherein collecting topological information from routers comprises downloading configuration information at predetermined time intervals (paragraph [0036]; paragraph [0064]).

As to claim 14, Maltz teaches the method for determining link utilization of claim 13, wherein collecting incoming and outgoing link utilization values from the routers in the IP network comprises collecting incoming and outgoing link utilization from all routers in the IP network (paragraph [0033]).

As to claim 15, Maltz teaches the method for determining link utilization of claim 14, wherein collecting topological information from routers in the IP network comprises collecting topological information from all routers in the IP network (figure 8; paragraph [0080]; paragraph [0068]).

As to claim 16, Maltz teaches the method for determining aggregate link utilization between two Point of Presence, the method comprising:

Collecting link utilization values for each link connecting the two Point of Presence over a predetermined polling period (paragraph [0068]);

Summing the link utilization values for all links connecting the two Points of Presence over a predetermined measurement period (paragraph [0049]);

Dividing the sum by the number of link utilization values included in the sum to give an average (paragraph [0068]); and

Multiplying the average by the number of links connecting the two Points of Presence (paragraph [0074]).

As to claim 17, Maltz teaches the method for determining aggregate link utilization between tow Points of Presence of claim 16, wherein collecting link utilization data for each link connecting the two Points of Presence comprises:

Each router in the two Points of Presence providing incoming and outgoing link utilization information, the incoming and outgoing link utilization information being an average over a short period of time; and averaging the incoming and outgoing link utilization information over a longer period of time (paragraph [0074]).

As to claim 18, Maltz teaches the method of determining aggregate link utilization between two Points of Presence of claim 17, wherein the incoming and outgoing link

utilization information further comprises an exponentially weighted moving average (paragraph [0045]).

As to claim 20, Maltz teaches the at least one machine readable media for causing at least one network management station in an IP network to perform a method for determining link utilization in an IP network, the method comprising:

Collecting incoming and outgoing link utilization values from routers over a predetermined polling period (paragraph [0068]);

Correlating the link utilization values with the topological information (paragraph [0037]; paragraph [0080]);

Summing the link utilization values collected over a first predetermined time period for all links connecting pair of Points of Presences (paragraph [0049]);

Dividing the sum by the number of link utilization values included in the sum to give an average paragraph [0068]); and

Collecting topological information from the routers at a second predetermined time intervals (figure 8; paragraph [0080]; paragraph [0068]).

As to claim 21, Maltz teaches the at least one machine readable media of claim 20, the method further comprising:

Multiplying the average by the number of links connecting the pair of Points of Presence (paragraph [0074]).

5. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 13, 19 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maltz et al. U.S. 20020143928.

Maltz teaches the invention substantially as claimed including method and system for collection and storage of traffic data in a computer network (see abstract).

As to claim 4, Maltz teaches the method for determining link utilization of claim 1.

Maltz fails to teach explicitly the predetermined time period is at least twice as long as the predetermined polling period.

However, Maltz teaches the predetermined time period and the predetermined polling period (paragraph [0040]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maltz in order to provide the predetermined time period is at least twice as long as the predetermined polling period. One would be motivated to do so to allow enough time.

As to claim 13, Maltz teaches the method for determining link utilization of claim 12.

Maltz fails to teach explicitly the predetermined time intervals at which configuration information is downloaded comprises one week.

However, Maltz teaches the predetermined time intervals at which configuration information is downloaded (paragraph [0036]; paragraph [0064]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maltz in order to provide the predetermined time intervals at which configuration information is downloaded comprises one week. One would be motivated to do so to allow specific time period.

As to claim 19, Maltz teaches the method for determining aggregate link utilization between two Points of Presence of claim 18.

Maltz fails to teach explicitly the longer period of time over which the incoming and outgoing link utilization information is averaged comprises ninety minutes.

However, Maltz teaches the longer period of time over which the incoming and outgoing link utilization information is averaged (paragraph [0074]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maltz in order to provide the longer period of time over which the incoming and outgoing link utilization information is averaged comprises ninety minutes. One would be motivated to do so to allow specific time period

As to claim 22, Maltz teaches the at least one machine readable medium of claim 21.

Maltz fails to teach explicitly the first predetermined time period is at least as long as the polling period.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maltz to provide the first predetermined time period is at least as long as the polling period. One would be motivated to do so to allow just enough time period.

As to claim 23, Maltz teaches the at least one machine readable media of claim 22.

Maltz fails to teach explicitly the polling period comprises five minutes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Maltz to provide the polling period comprising five minutes. One would be motivated to do so to allow specific time period.

As to claim 24, Maltz teaches the at least one machine readable media of claim 23.

Maltz fails to teach explicitly the first predetermined period comprises ninety minutes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maltz to provide the first predetermined period comprises ninety minutes. One would be motivated to do so to allow specific time period.

As to claim 25, Maltz teaches the at least one machine readable media of claim 24.

Maltz fails to teach explicitly the second predetermined time intervals comprise one week.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maltz in order to provide the second predetermined time intervals comprise one week. One would be motivated to do so to allow specific time period.

7. Response to Arguments

Applicant's arguments filed 06/21/07 have been fully considered but they are not persuasive.

(A) As to claim 4, Applicants disagree with the 112, second paragraph, and direct the Examiner's attention to claim 3, which recites ".... a predetermined time period"

In regards to the point (A), Examiner respectfully disagrees.

Claim 4 depends on claim 1, not in claim 3. The rejection is maintained and appropriate correction is required.

(B) Applicants argue that although the Maltz reference discloses, "link utilization can be calculated by measuring the number of bytes that flow out a line card interface *each second* and dividing by the total number of bytes the link can transmit in a second," the reference fails to disclose a predetermined polling period. *See, Maltz* reference at [[0068]. Rather, *each second* pertains to a link utilization rate, i.e., number of bytes per second. As such, Maltz does not consider a predetermined polling period over which to collect utilization values for links in the IP network.

In regards to the point (B), Examiner respectfully disagrees.

Paragraph [0068], Maltz discloses ...."link utilization can be calculated by measuring the number of bytes that flow out a line card interface *each second* and dividing by the total number of bytes the link can transmit in a second (i.e. communications technique that determines when a terminal is ready to send data or "predetermined polling period")"...

(C) Applicants argue that Maltz fails to disclose collecting topological information for links.

In regards to the point (C), Examiner respectfully disagrees.

In paragraph [0080], Maltz discloses ...the network topology information 820 allowing the TMS Statistics collection server to know where to go to collect the desired information...(i.e. "collecting topological information for links").

(D) Applicants argue that Maltz reference also fails to disclose dividing the sum of link utilization values by the number of link utilization values. Furthermore, Applicants argue that Maltz neither consider summing the utilization values nor considers dividing the sum by the number of link utilization values.

In regards to the point (D), Examiner respectfully disagrees.

Paragraph [0068], Maltz discloses ....link utilization can be calculated by measuring the number of bytes (i.e. summing the utilization values) that flow out a line card interface *each second* and dividing by the total number of bytes the link can transmit in a second (i.e. inherently "dividing the sum by the number of link utilization values")...

(E) Applicants argue that Maltz reference does not describe each and every element of dependent claims 7 and 18.

In regards to the point (E), Examiner respectfully disagrees.

In paragraphs [0045] and [0074], Maltz discloses every element of dependent

claims 7 and 18.

(F) On page 13 of Applicants' remarks, Applicants argue that Maltz reference fails to mention any such active link in claim 11.

In regards to the point (F) Examiner respectfully disagrees.

In paragraph [0035], Maltz discloses in figure 3, the operator's network comprising a plurality of network elements located at Points of Presence or nodes. There are 3 routers R in each of the three POPs, which are connected through links (i.e. "active link").

(G) Applicants argue that Maltz reference does not describe each and every element of dependent claim 11.

In regards to the point (G), Examiner respectfully disagrees.

In paragraphs [0033] - [0036], Maltz discloses every element of dependent claim 11.

(H) Applicants argue that Maltz reference does not describe each and every element of dependent claim 21.

In regards to the point (H), Examiner respectfully disagrees.

In paragraphs [0074], Maltz discloses every element of claim 11.

8. Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to El Hadji M Sall whose telephone number is 571-272-4010. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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